

being anticipated by Lin et al. (US 6,127,053), hereafter "Lin '053." Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin '475 in view of Dahlberg et al. (U.S. 6,166,539), hereafter "Dahlberg." Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin '475 in view of Gill (U.S. 6,178,072). Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin '475 in view of Dill et al. (U.S. 6,114,719), hereafter "Dill." These rejections are defective because Lin '475, Dahlberg, Gill, and Dill, alone or in combination, fail to teach each and every feature of claims 1-4, and 6-15 as required by 35 U.S.C. 102 and 103, while Lin '053 fails to teach each and every feature of claim 16, as required by 35 U.S.C. 102.

Throughout the Final Office Action, the Examiner repeatedly relies on "inherency" arguments to support the rejections under 35 U.S.C. 102(e). This is an improper rejection under 35 U.S.C. 102(e). In particular, as set forth in MPEP 2112, a rejection under 35 U.S.C. 102(e) is not proper. Accordingly, Applicant requests clarification of the rejections under 35 U.S.C. 102(e) and withdraw of the finality of the present Office Action.

Claim 1 recites:

"A data storage system comprising a set of structures including:

- a first structure of layers including at least a first ferromagnetic layer and a second ferromagnetic layer with at least a separation layer of a non-magnetic material therebetween, said first structure having at least a magneto resistance effect;

- a second structure including at least one magnetic layer, said second structure influencing at least one intrinsic magnetic characteristic of said first structure;

- and said second structure being separated from said first structure by at least a spacer layer, wherein the non-magnetic material is a metal and the spacer layer comprises a high-resistive metallic material and said spacer layer furthermore causing a mainly ferromagnetic coupling of said second structure on said first structure while not substantially influencing the magnitude of the magneto resistance effect of said first structure.”

Claims

Regarding claim 1, Lin ‘475 fails to teach, among other features, the claimed “spacer layer comprises a high-resistive metallic material and said spacer layer furthermore causing a mainly ferromagnetic coupling of said second structure on said first structure while not substantially influencing the magnitude of the magneto resistance effect of said first structure.” Claim 13 includes a similar feature. On the contrary, Lin ‘475 teaches that the “second spacer” (which the Examiner has equated with the claimed “spacer layer ... of a high-resistive metallic material”) provides **magnetic isolation** (col. 5, lines 21-24) of the keeper layer 406 (which the Examiner asserts is part of the claimed “second structure”) from the free layer 410 (which the Examiner asserts is part of the claimed “first structure”). Clearly, therefore, the Examiner’s statement (Office Action, page 4, first paragraph) that it is “inherent that the spacer layer causes a mainly ferromagnetic coupling of the second structure on the first structure” is contradicted by the teachings of Lin ‘475. Further, the Examiner fails to provide proper evidence supporting the assertion that the spacer layer of Lin ‘475 inherently causes a mainly ferromagnetic coupling of the second structure on the first structure.

Regarding independent claim 14, Lin ‘475 fails to teach, among other features, the

claimed “defining at least one layer of a high-resistive metallic material in-between said second structure and said first structure, and said layer of a high-resistive metallic material furthermore at least partially inducing a crystallographic characteristic on said second structure.” Lin ‘475 does not disclose that the “second spacer” induces any type of crystallographic characteristic on the keeper level 406. Further, the Examiner fails to provide proper evidence supporting the alleged inherency of the claimed “inducing a crystallographic characteristic.”

Regarding independent claim 15, Lin ‘475 does not disclose the tuning of a magneto resistance characteristic of a magnetic system specifically by “adjusting a thickness of the high-resistive metallic material” in the second structure. In particular, Lin ‘475 does not disclose the tuning of the magneto resistance characteristic, nor does Lin ‘475 recognize that such tuning can be accomplished by adjusting the thickness of the second spacer. Further, the Examiner fails to provide proper evidence supporting the alleged inherency of the claimed “tuning.”

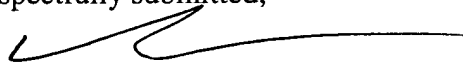
In section 8 of the above-referenced Final Office Action, the Examiner improperly uses the teachings of the present invention, and the alleged similarities between the present invention and Lin ‘475, to support the arguments regarding inherency, rather than relying on the teachings of Lin ‘475 itself as required by section 2112 of the MPEP. In particular, section 2112 of the MPEP requires that in relying upon the theory of inherency, the “examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic **necessarily flows from the teachings of the applied prior art.**” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Accordingly, Applicant requests clarification of the Examiner’s arguments.

Applicant respectfully submits, therefore, that all pending claims 1-4 and 6-16 are in condition for allowance.

If the Examiner believes that anything further is necessary to place the application in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number listed below.

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Respectfully submitted,



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